ABSTRACT

A basic idea is to employ multi-user detection (MUD) at the receiver side in a multi-hop network to concurrently decode multiple packets transmitted from multiple nodes

5   (T_1, T_2), and prioritize among the correctly decoded packets to select one or more packets suitable for forwarding, and finally reply with a packet acknowledgement (ACK) to the corresponding transmitting node for each selected packet. In this way, the design choice of MUD is exploited in the forwarding procedure. It is furthermore beneficial to exploit also the diversity enabled by the existence of multiple relay nodes

10   (R_1, R_2, R_3). A transmitting node that transmits its data packet signal to multiple relay candidate nodes and then receives packet acknowledgements from at least two relay candidate nodes preferably performs a prioritization to select a suitable relay node. The transmitting node then transmits a forwarding order (FO) to the selected relay node, which takes on responsibility for forwarding the information to the next node.

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(Fig. 3)